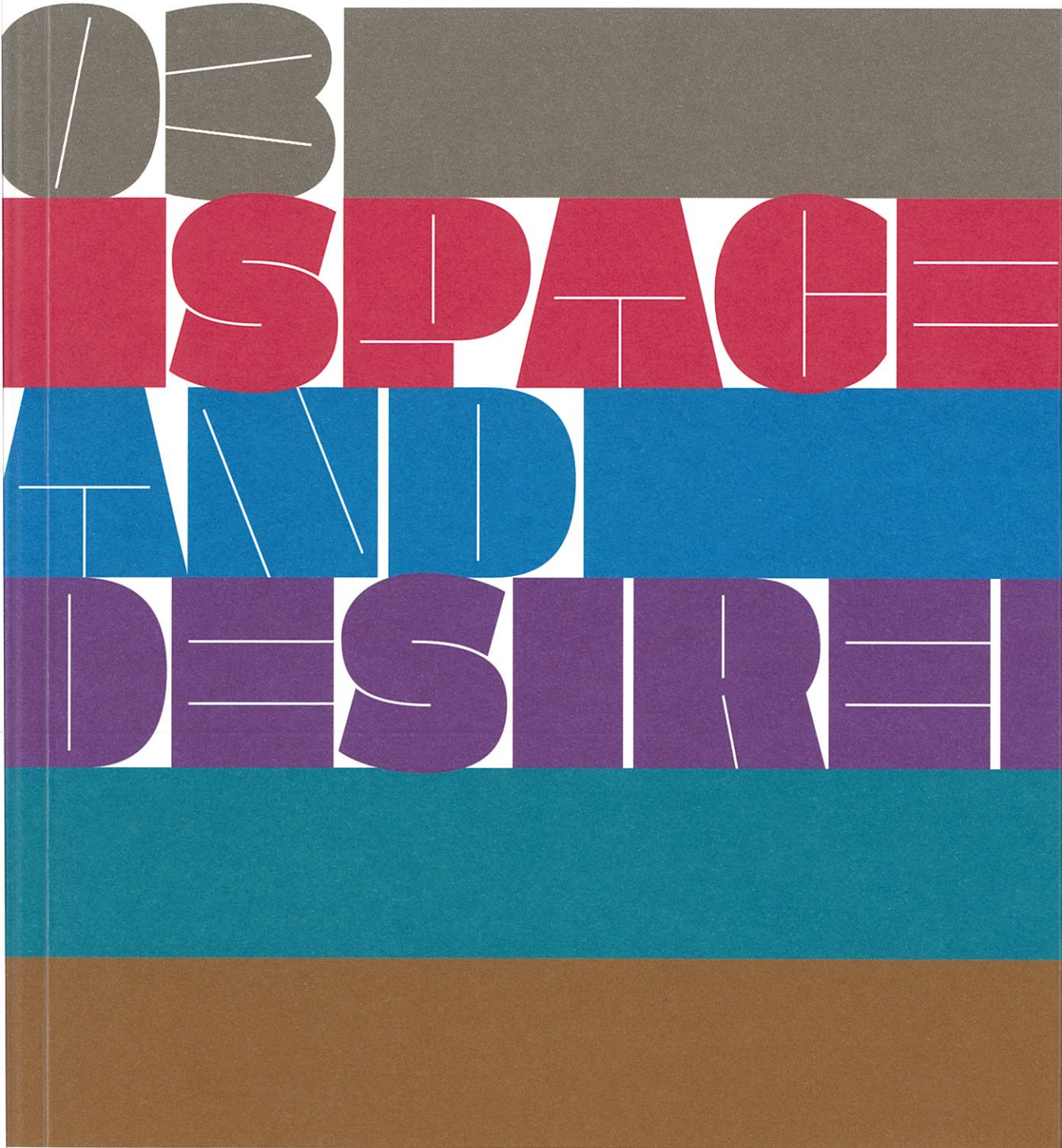


SPACE AND DESIRE

Scenographic Strategies in Theatre, Art and Media
Thea Brejzek, Wolfgang Greisenegger, Lawrence Wallen | Editors



NO|W|HERE

Scenographies for SomePlaceElse

By Wolfgang Muench

Virtual Spaces are most often not true spaces but collections of separate objects. Lev Manovich

Abstract | Despite Manovich's claim that there is 'no space in cyberspace' (Manovich 2001: 253), spatial metaphors and representations are omnipresent in digital technology. Blessed with unreliable machinery, unfocussed theoretical discourses and unprecedented opportunities, twentieth century media art struggled with a coherent concept of space for a post-industrialised, post-modern modernity. The scenographies for dataspace, located in a digital nowhere between nineteenth-century panoramas and Marshall McLuhan's famous catch phrase 'The Medium is the Message' failed to connect with early twentieth century developments in real-world avant-garde theatre, and its significant interfaces with spatial art practices, happenings and performances of the 1960s. This paper reviews spatial approaches during the colonisation of virtual reality within the context of diverse cultural and artistic trajectories, and argues that scenographies for dataspace were regarded only as *quantité négociable* in the realm of digital technology.

1. | In view of the fact that one should regard cyberspace 'as a space only in the most mathematical sense', as Simon Penny suggested in his 1996 *Realities of the Virtual* (Penny, 1996: 129), it is to some extent surprising that visual artists' encounters with machinery that consists basically of a massive array of Boolean calculators and a wide range of peripherals, interconnected through various text-based communication protocols, almost inevitably resulted in the creation of *un-real* spaces. The relatively short history of Digital Media Art saw 'Chat Rooms' as early as the 1970s, 'Multi User Dungeons' in the 1980s, complete 'Digital Cities' in the 1990s, and a phantasmagoria of spatial artworks

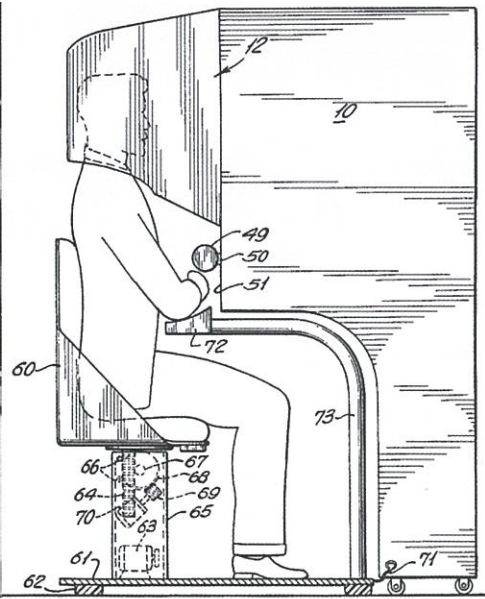
that immersed the audience into computer-generated imaginary worlds. Such immersive environments, capable of responding to the user's physical action through a variety of input sensors, formed a significant part of what emerged in the 1990s as the global, although rather short-lived, phenomenon of Interactive Art. They displayed ever-new mutations of the technology-based Virtual Reality rhetoric that dates back to the early 1960s when Morton Heilig introduced his pre-computer multimodal machine *Sensorama*¹, (Figure 1), and the late 1960s when Myron Krueger presented the first computer-controlled interactive artwork *Glow-flow*². | FIG.1 SENSORAMA, MORTON HEILIG, 1962

The desire to re-construct reality using digital technologies is less surprising once contextualised within the larger 'desire for simulation over the real, for the spectacular, the simulated, [that] has always been carried as far as the available technology would allow', which Simon Penny attributed especially to western culture (Penny 1994: 234). His remarks, made with the advent of the triumphant advance of digital technology, suggest a perpetuation of the long tradition of performative and fine arts practices concerned with spatial representation and re-creation during the set-up of the parallel universe of dataspace with all its digital inventories. The artists' desire to generate some sort of alternative to known reality within the realm of artistic practice is by no means unique to art works related to Virtual Reality, although the immense hype related to the unprecedented and revolutionary promises, prospects and potential ascribed to digital technology, started in the 1960s by its evangelist Marshall McLuhan, often evoked a different anticipation.

But as always in revolutionary times, traditions tend to present themselves as a rather complex topic. So with hindsight it is understandable that the accompanying academic discourse for the emerging new



FIG. 1



art form that deployed digital technology, non-linear narrative structures, and to some degree artificial life and artificial intelligence algorithms, was fragmented at best and largely unable to keep pace with the rapid development of technologies, as Simon Penny argues in more detail elsewhere in this publication (Penny 2010). It started off with the initial mistake of locating this discourse predominantly within the field of visual arts, despite its reliance on performative elements, thus disconnecting the novel art form in its early stages in the 1990s from the cultural expertise and experiences concerned with spectacle, space and audience already residing in performing arts. In subsequent years the waters were further muddied by the reverberations from McLuhan's theories of technological determinism, that advocated the detachment of technology from transmitted content, thus leading to the valuing of amazing technological solutions over (old-fashioned) artistic content.

Both the lack of theoretical underpinning, and the mismatch between discourse and reality in media art, left a few fundamental issues related to *Immersive Environments* largely unresolved: the definition of a new role for the artist, who contributed only a skeleton framework for an art piece, leaving the generation of final content to human-computer interaction; the definition of a new role for the audience, whose members were now expected to simultaneously fulfil the dual roles of observers and co-creators of the artwork; and the definition of a new scenography for the integration of real and virtual space in such hybrid

spatial environments. A scenography corresponding to the n-dimensional mathematical reality in which space has lost all absolute qualities. Mathematical space is nothing more than a variable, its manifestation in digital environments just another quantity subject to the finesse of software designers.

One is tempted to assume that the prospect of leaving behind all physical constraints in the definition of a space for an emerging art form that transformed the audience from passive viewers or semi-active participants with a scripted reality to active *immersants* into a virtual reality would have generated a serious interest in involving scenographers in the process. However, the spectacle that has unfolded in dataspace since the early 1960s conceded only marginal importance to the legacy of the *art* of spatial design. The subject of spatial representation in a mathematical space was in theory a matter of philosophical contemplation, and in practice overwhelmingly subject to technical feasibility (Penny 2011: in this publication). It had nothing to do with scenography.

It was a mathematical problem after all, an engineering problem, and a computer science problem. It was a meta-physical problem in the best sense of the term, since it not only provided a way to transcend the doctrine of reality in long-winded theory, but also to create an alternate reality since it offered a visual representation of a construct of ideas, including all kinds of sensory experiences through immersive spaces and force-feedback systems. It was a military problem, since a significant portion of early research in these

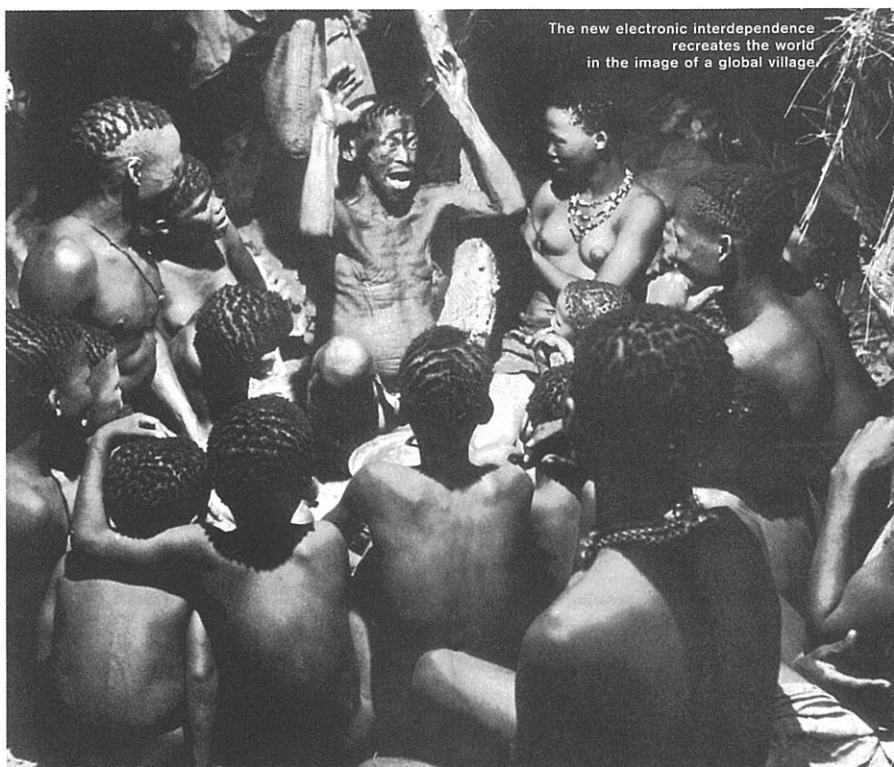


FIG. 2

technologies happened under the umbrella of the US defence agency, and it was a commercial problem once this research was continued with significant funding from large companies, or was relocated entirely into their research labs. It was a societal problem, since it became very clear even in the early stages of the information society that the emerging communication technologies would have massive impacts on society. And it was a cultural problem, since these technologies provided an early taste of globalization on an individual and personal level by interconnecting different cultures on the emerging technical platform of a novel cultural commodity, that inherited cultural values from the western hemisphere, where they had been largely invented.

It was, however, not a problem of spatial design. It initiated no desire for a further development of an expanded notion of scenography for virtual worlds, but overwhelmingly the *Desire for Codes*, as Japanese media artist Seiko Mikami interestingly entitled her latest interactive artwork at YCAM Yamaguchi Centre for Arts and Media in 2010. The definition and implementation of *mise en scènes* for the digital theatre were largely left to the, often semi-reasonable, activities of software engineers in the realm of cultural production. Their main objective was to push technological boundaries

even if this came at the expense of artistic finesse, as Florian Rötzer, philosopher, journalist, curator and co-founder of *TELEPOLIS*, the award winning online magazine for net-culture, observed as early as 1991 (Rötzer 1991).

2. | The mismatch between emerging Interactive Art and established fine arts institutions did not go unnoticed. Peter Weibel, while re-positioning the Linz ARS ELECTRONICA from a festival for digital music to arguably the most important international forum for visual digital arts in the late 1980s and early 1990s, postulated that art produced with technological media would be in many aspects a radically different art form from what preceded it. He regarded the existing theoretical discourse to be incapable of providing an appropriate analysis of media art (see Weibel 1991), a verdict that left media art pretty much in an artistic-theoretical nowhere land.

Hans Peter Schwarz, founding Director of the Media Museum at the ZKM | Centre for Art and Media, described at length the serious challenges faced and 'pioneer work' required in attempting to integrate the 'explosive charge of digital communication media' into the institution museum. Notably, he mentioned this in the publication on occasion of the ZKM Media Museum's opening in 1997 (Schwarz & Zentrum für Kunst und

Medientechnologie Karlsruhe, 1997: 11ff). As it turned out, the institution *museum* did not explode, but media art was institutionalised, leading to what Armin Medosch labelled *High Media Art*, the establishment of a 'certain type of media art... as the leading paradigm', whose 'digital aesthetics... was compatible with the black cube inside the white cube of the museum' (Medosch 2005: 35).

For less museum-compatible types of media art, pursuing more the trajectory of happenings and performative events, it became increasingly difficult to compete with the normative power of highly funded specialised institutions. Indeed, the renowned British art group *Blast Theory*, experimenting with live multi-media performances within the emerging club culture since the beginning of the 1990s, acknowledged that their work's 'relationship with live art and performance became less apparent' from 1999 onwards. Incidentally, this was the year when they presented *Desert Rain*, a large-scale installation, performance and game using virtual reality, at the ZKM Karlsruhe. Only in recent years has there been a marked recognition of the importance of the group's thinking about performativity, presence and site specificity (see *Blast Theory*, 2009). The appearances of the Austro-German artist collective *Van Gogh TV* in media festivals and exhibitions has declined significantly since the middle of the 1990s, and their projects were subsequently transferred to online platforms such as *youtube* and *Facebook*. *Van Gogh TV* created interactive projects for radio, television and online multi-user systems since 1986, deploying 'radical multi-framing of images, and multi-layering of inputs' from a patchwork of 'incoming information: faxes, text messages, videos, pictures, sounds, noises and voices' (Dudsek 2008). Its 1992 Documenta IX project *Piazza Virtuale*, a one hundred day, hybrid, user generated, and rather chaotic media happening in

the global communication space marked a pioneering cornerstone for the simultaneous presence of a large number of users in an electronic space.

It is not without irony that works like *Piazza Virtuale*, which displayed qualities closely related to Marshall McLuhan's notion of *allatocness*, were often perceived as interactive, user-generated cacophony by an academic discourse that otherwise was relatively relaxed about contextualising media art within the theories of McLuhan. Rötzer observed as early as 1991 that McLuhan's catchphrase *The Medium is the Message*, that emphasised the formative power of media technology for the constitution of media content, had apparently already been introduced to the realm of media art as a given (see Rötzer 1991: 30f).

With his 1964 *Understanding Media* (McLuhan 2001), McLuhan provided a widely discussed forecast of the future impact of emerging electronic communication technologies on our post-industrialised society. Mass media technologies would expose mankind to a constant and massive flow of instantaneous, simultaneous and interrelated information from various communication channels. It would necessitate a new mode of information perception, reception and processing, from a slow, linear-successive, logical practice of data classification to instant pattern recognition in a novel mediated reality, defined by a montage-style concurrency of disparate fragments. This new reality would recreate the acoustic space of primordial societies, in which the information media would permeate all areas of private, social, economic and political life, interconnecting formerly distant spaces, subjects and individuals in the mediated close proximity of a *Global Village*, (Figure 2). | FIG.2 MARSHALL MCLUHAN: THE NEW ELECTRONIC INTERDEPENDENCE RECREATES THE WORLD IN THE IMAGE OF A GLOBAL VILLAGE, ILLUSTRATION FROM 'THE MEDIUM IS THE MASSAGE', 1967

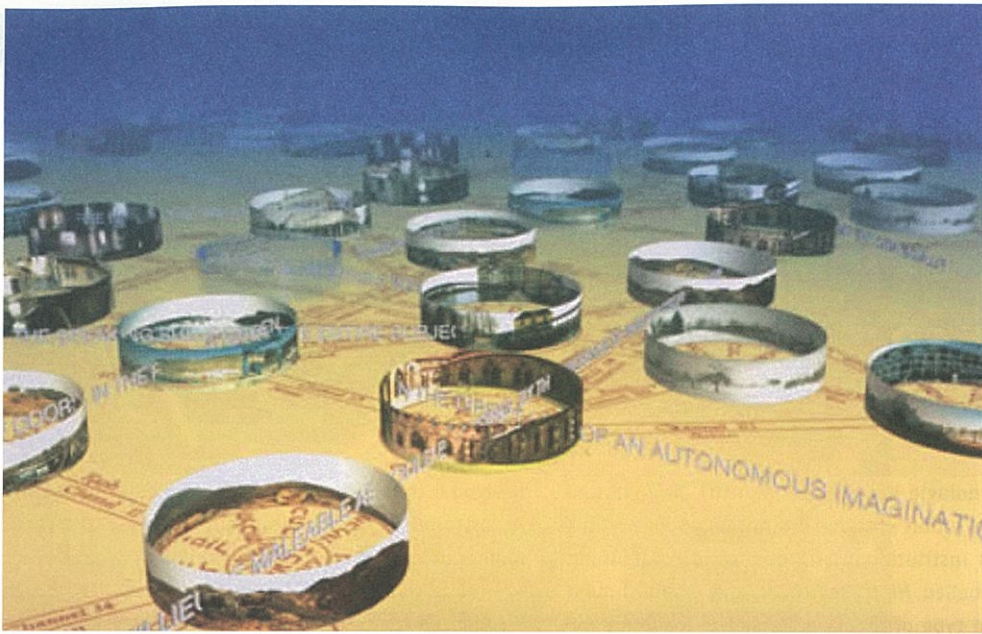


FIG. 3

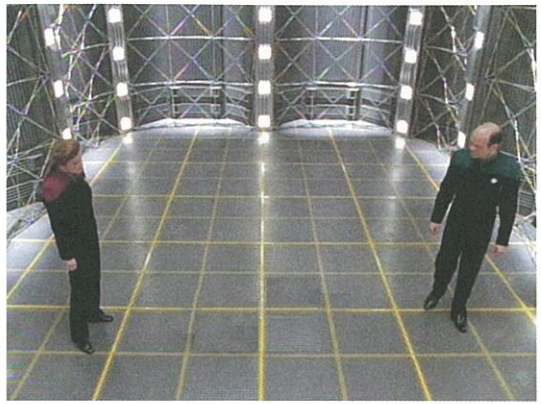
McLuhan thus assumed a leading role in the constitution of what Armin Medosch described as *Technological Determinism in Media Art*, a line of argument that emphasised a focus on technological advances for the formation of media art (Medosch 2005). And despite a brief decline of his reputation after his death in 1980, not least because the world was 'still working in a medium that the decedent had pronounced obsolete' (Lapham 2001: XI), he advanced to become mass media's celebrated *Guru*.

He is arguably also the most over-quoted and under-read author in the comparatively short history of printed matter on subjects of media technology. Under-read in the sense that even McLuhan himself joked that no one actually read McLuhan, and if people read anything, it would likely be not much more than the title of the first chapter of *Understanding Media: The Medium is the Message* (Levinson 1999: 36). Over-quoted in the sense that his writing style, which already met the 'specifications of the epistemology that he ascribes to the electronic media – non-linear, repetitive, discontinuous, intuitive, proceeding by analogy instead of sequential argument' (Lapham 2001: XI), was open to semi-substantiated referencing to fragmented parts of his theories. To such an extent, that Lewis Lapham, in his introduction to the 2001 MIT edition of *Understanding Media*, had the courtesy to include the warning that only 'few of the people who explicated his text fully understood what it was that he was trying to say' (Lapham 2001: X).

The conveniently fragmented understanding of his theoretical approaches led to the appearance of bits and pieces extracted from his books in various texts on media art concerned with the exhilarating prospects of data-processing machines that could produce sensory effects, connectivity and instantaneous long-distance communication to all remaining niches of the globe. However, McLuhan has always been a rather misplaced person in the discourse on media art. It slipped media art's immediate attention that his publications were not concerned with artistic practice deploying new media technology, which renders the sustained presence of McLuhan's texts within the academic discourse on media art rather surprising. McLuhan's writings addressed the meta-level of the impact of global media technology on society. Any application of these theories to the micro-cosmos of artistic practice presented, to say the least, a challenging concept.

3. | One of the most defining characteristics of technology-based virtual reality with respect to scenography that distinguishes it from performance art is the reversed viewing direction in digital worlds. Immersive environments place the audience centre-stage, and make it look from the inside out where the topography of dataspace, a site filled with the sound and fury of technological surprises, unfolded. The scenographies of dataspace were not concerned with theatrical representation of the real world on a stage, but with visualising a virtual world that surrounds the stage. The

FIG. 4



art-historical point of reference for Virtual Reality is the Panorama, not the theatre stage. Oliver Grau, in his 2003 *Virtual Art: From Illusion to Immersion* (Grau 2003) describes the painted illusionism of panoramas in the context of the historical development of immersive art in detail.

Robert Barker patented the panorama, a 360-degree circular painting surrounding an elevated central viewing platform in 1789. Despite its huge popularity in the early nineteenth century, it was relegated to a niche existence within visual arts before the end of the century, and was eventually eclipsed by the illusionist qualities of emerging cinema's moving pictures. Post-cinematic technologies resurrected the panoramic image in commercial applications such as *Quicktime Virtual Reality (QTVR)*, introduced by Apple in 1994, as well as in media art with works such as Michael Naimark's 1995 *Be Now Here* or Jeffrey Shaw's 1995 *Place – a user's manual*, (Figure 3). The set-up of these virtual reality installations was similar to Barker's patent, with a viewer's platform in the center of a circular screen, onto which pre-recorded panoramic photos or video footage were projected. The user could use a simple interface in the center of the stage to navigate the panorama of moving pictures (Naimark), or navigate in a larger virtual space constituted by eleven cylinders, that displayed panoramic still photography of various locations, which were connected through a diagram composed of the Sephirothic *Tree of Life*. | FIG. 3 JEFFREY SHAW, *PLACE – A USER'S MANUAL*, 1995

The physical setting of a circular screen, or a dome as in Shaw's 1993 *EVE Extended Virtual Environment*, was however of no further importance for virtual reality. It is the very essence of all virtual reality environments to follow the model of a sphere, with the audience placed in the centre, a set-up that refers to the physical notion of a spherical field of vision. The sphere's imagined

inner boundaries served as the fundamental computational points of reference for the visualisation of data, no matter whether this mathematical sphere actually materialised in the real world or not, for example in *Head Mounted Displays*, created by Ivan Sutherland in 1967 at Harvard University after his time at DARPA, the research agency of the US Department of Defence.

All such environments relied on massive, centralized, state-of-the-art computer power for the generation of virtual realities, even though the technologies used for these environments were (and still are) light-years away from incorporating the holy grail of virtuality: a sophisticated, full-blown artificial intelligence system that could transform *simulated illusion into generated illusion*, capable of independently interacting with any kind of user input.

Such a technological system existed, although not in science, but in fiction. Janet Murray, in her 1997 *Hamlet on the Holodeck*, describes its features in the context of interactive narratives: *First introduced on Star Trek: The Next Generation in 1987, the holodeck consists of an empty black cube covered in white grid-lines upon which a computer can project elaborate simulations combining holography with magnetic force fields and energy-to-matter conversions. The result is an illusory world [...] that looks and behaves like the actual world. The Holodeck is a universal fantasy machine, open to individual programming: a vision of the computer as a kind of storytelling genie in the lamp'* (Murray 1997: 15). | FIG. 4 HOLODECK, *STAR TREK – THE NEXT GENERATION*, FIRST BROADCASTED IN 1987

The *Cave Automatic Virtual Environment*, developed in 1992 at University of Illinois Chicago, inherited a striking resemblance to this fantasy machine, although the Holodeck's holographic generation of three-dimensional illusion had to be replaced by stereoscopic images due to technological shortcomings. The artists'



FIG. 5

access to this highly complex and expensive technology was only through a few specialised institutions such as ARS Electronica, which could firstly afford such technology, and would secondly allow artists to use it. Artworks created for the CAVE (see Figure 5) formulated a spatial paradigm in which the *illusionary and simulated* space in continuation of real space was replaced by an *algorithmic and interactively created* space, which largely disrespected physical space. | FIG. 5 KOGLER, P./ ARS ELECTRONICA FUTURELAB, CAVE (APPLICATION), 1999

The scenographies for this dataspace were located somewhere between fantasy and abstraction, but their content did not matter particularly. Their first and foremost *raison d'être* was to be located *some place else* from this reality, and not to serve as representations of anything from this world.

But digital technology lives up to its infamous unpredictability one more time. Shaw's 2008 work *UNMAKEABLELOVE* (Figure 6), developed with Sarah Kenderdine and inspired by Samuel Beckett's 1972 *The Lost Ones*, reversed the reversed viewing direction again. Shaw and Kenderdine used a technological infrastructure consisting of 'a five-meter diameter hexagonal construction with six rear-projected screens and stereoscopic 3D viewing using twelve projectors, passive Polaroid filters and glasses. [It...] offers a physically immersive three-dimensional space of representation that constitutes an augmentation and amalgamation of real and virtual realities' (Shaw & Kenderdine 2008).

FIG. 6 JEFFREY SHAW & SARAH KENDERDINE, UNMAKEABLELOVE, 2008

With this work, Virtual Reality is back to its origins in the realm of theatre, where Antonin Artaud combined the two contrasting terms into one idiom in his 1938 *The Alchemical Theatre* (Artaud 1958: 50), and to Kiesler's 1924 utopist architectural design for the stage of modern theatre, the *Raumbuehne*.

4. | A comprehensive critical history of the scenographies for dataspace has yet to be published, but it might prove to be an impossible task due to the very nature of the subject under investigation. The ephemeral, user generated, fluidly changing virtual worlds defy easy depiction and documentation in print or time-based media. Any increase in the complexity of algorithms designed to generate the machine's response to user behaviour, which were more often than not regarded as a benchmark for quality of the artwork, adds to this phenomenon. In a perfect virtual world, every user would experience his or her unique encounter with the visual potential offered by the technical implementation of an artistic idea, ridiculing every attempt to provide an adequate portrayal of these visual worlds. Unless, however, it would be presented in the form of a narrative, describing the sensory impacts of immersive environments on the audience more from the viewpoint of a novelist than a media theorist. For obvious reasons, this option was not at hand, although frequent references in early media theory to fiction such as Ridley Scott's 1982 *Blade Runner* or Gibson's 1984 cyberpunk novel *Neuromancer* are noteworthy in this respect (Klepper Mayer & Schneck 1996: 220ff).

The approach more compatible with common practice in art theory was, apart from contextualising the work within a larger media theoretical discourse, to emphasise the specific formal aspects of the artwork, in particular those related to the technological and material conditions of the aesthetic process. As for the production part of the artwork, there weren't many alternatives available for the artists anyway. The never-ending struggle with an ever-changing technology just didn't allow for much contemplation on artistic content, while trying to solve multifarious unexpected obstacles in the realisation process (Penny 2011: In this publication). As for the critical reception of the artwork,

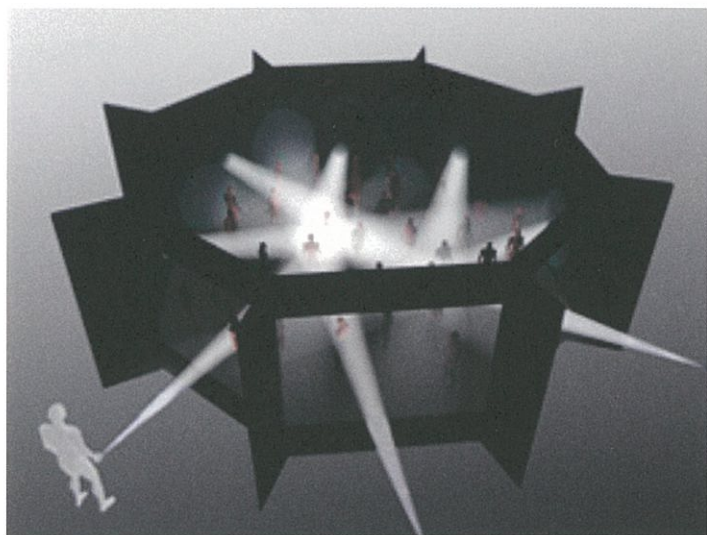


FIG. 6

the focus on formal qualities is evident in almost every review of such works, whether published in catalogues or anthologies.

One key example might be Stephen Wilson's discussion of Luc Courchesne's subtle work *Landscape One*, awarded the Grand Prize at the 1997 Biennale of Tokyo's NTT InterCommunication Center. *Landscape One* is an immersive interactive installation in which the user can contact, communicate and interact with virtual characters appearing in the scenery of a garden. In his 2002 anthology *Information Arts*, Wilson points to the 'photorealistic 360-degree' representation of a garden, the usage of 'voice or touch' for human-computer interaction, the importance of communicative and interactive elements for 'gaining access to all parts of the event', and the specific response of the system once the user could 'convince a [virtual] character to lead them somewhere'. He ends the short paragraph, illustrated with a blurry, low-resolution image in black and white, with: *The experience is about communication / discommunication between people, with movements through space as manifestation of its nature; successful forms of communication will offer visitors more varied inroads into more remote places* (Wilson 2002: 801f).

His review gives little more than a brief overview of the technical and operational details of the art piece, as well as the main theoretical concerns embedded in the work. More content related aspects of the work, indicating details of the landscape in general, or what kinds of virtual characters actually populate the digital garden, or what 'successful forms of communication' could possibly mean, are not further mentioned. Information concerning the scenography of the landscape is

missing entirely, although this landscape is obviously important enough to define the title of the work.

Wilson is not alone: Steve Dixon, author of the 2007 *Digital Performance: A History of New Media in Theatre, Dance, Performing Art, and Installation*, only adds that the work is a 'rich, panoramic four screen space', and that Courchesne's work 'uses aspects of navigational interactivity, for example, menu options and multiple choice questions, and combines them with highly conversational modes' (Dixon 2007: 588). Jean Gagnon, former Executive Director of the renowned Daniel Langlois Foundation for Art, Science and Technology in Montréal, and author of the article on *Landscape One* on the Foundation's website, apart from highlighting that the work consists of a 'network of four computers with touchplates, microphones and body detectors, four videodisc players, video projectors, and screens', described at least some non-technology related details: The work displays video footage captured at Mount-Royal park in Montréal, the characters 'seem free to roam the landscape', while the visitor, who 'cannot do so [free roaming] without being guided by one of [the characters]', is located 'in the centre of a panoramic landscape, [and] watches the unfolding scenes of a public garden, recorded over a period of 24 hours'. He also makes the effort to contextualise the work within art history, indicating that Courchesne spoke 'of the links between his work and painting', and back-references *Landscape One*, although with no further explanation, to Manet's *Le Déjeuner sur l'Herbe* (1863), only to hastily revert back to the 'experience in dialogic communication... between people whose movements through space seem to reveal their personality' (Gagnon, 2000).

Luc Courchesne himself does not reveal many details on content or aesthetics either. He starts the description of his own work on his website with a detailed account of the technology used. The further text covers essentially the same technical details as in the above-mentioned reviews, although he specifies that the 'four walls of a space are "painted", with video projectors, into a single photo realistic 360-degree-landscape'. And he refers briefly and rather cryptically to spatial aspects of the work, in explicating that 'because real visitors are using virtual characters to steer their way through space, the nature of visitor's relationship to the character will define the space – physical or metaphorical – that can be accessed' (Courchesne 2010). In addition, a short video clip is provided, presumably showing a brief sequence of the single channel video footage, not the 360-degree projection, at least indicating that the characters are actually real human beings, recorded on video in a real park. However, this is already an assumption, since it is nowhere explicitly mentioned. A couple of still images give not more than a rough impression of the visitor's experience inside the installation. | FIG.7 LUC COURCHESNE, LANDSCAPE ONE, 1997

Even a relatively short while after the realisation of the artwork, and only a few years after the work was last shown in public (2004, according to the artists' website), the attempt to find out details of the visual aesthetics used for the creation of the immersive environments is comparable to a media archaeological excavation. But to be clear here: this is no critique of Luc Courchesne. He is an extraordinary artist, who created some of the most appealing works of media art, displaying a highly sensitive understanding of digital media technology and its deployment for artworks. Nor is it a critique of Wilson, Dixon or Gagnon. It could be anyone; the list is easily extendible.

Apparently, neither artist nor theorists were further interested in discussing the content of media art works, let alone issues of spatial design and scenography of the virtual space that was generated, defined, altered, explored, navigated, and / or experienced by immersants through various activities inside a defined real space. The amount of nonchalance in disrespecting the aesthetics of digitally created worlds in the making, critical reception and documentation of immersive environments, after all a rather essential element in such artworks, is truly astounding. But it is a direct effect of a critical discourse, in which 'art historians were notably absent' (Penny 2011: In this publication), that oscillated between techno-aesthetics, techno-optimism and techno-determinism. Left in discursive nowhere land, artists introduced 'an element of self-referentiality' into their works of media art, in that 'they are not just 'using' a medium but also questioning and challenging its boundaries; [trying] to make implicit or explicit statements about properties of media technologies', as Medosch noted (Medosch 2005: 25). The discourse on media art was trapped in a media-technological formalism that valued technical ingenuity in the realisation of the artwork far more highly than artistic content and aesthetics resulting from this ingenuity.

However, this again is not unique to media art. The modernist approach to re-evaluate the materialistic or medial qualities in artistic expression, resulting in a shift from content-driven aesthetics to formal aesthetics in art production and reception, is arguably a common feature in emerging art forms, as Norbert Schmitz describes in great detail in his 2001 *Medialität als ästhetische Strategie der Moderne. Zur Diskursgeschichte der Medienkunst*. Most avant-garde art movements would partly seek legitimation for their radical claims through emphasising the change in the technical conditions and framework for artistic production at

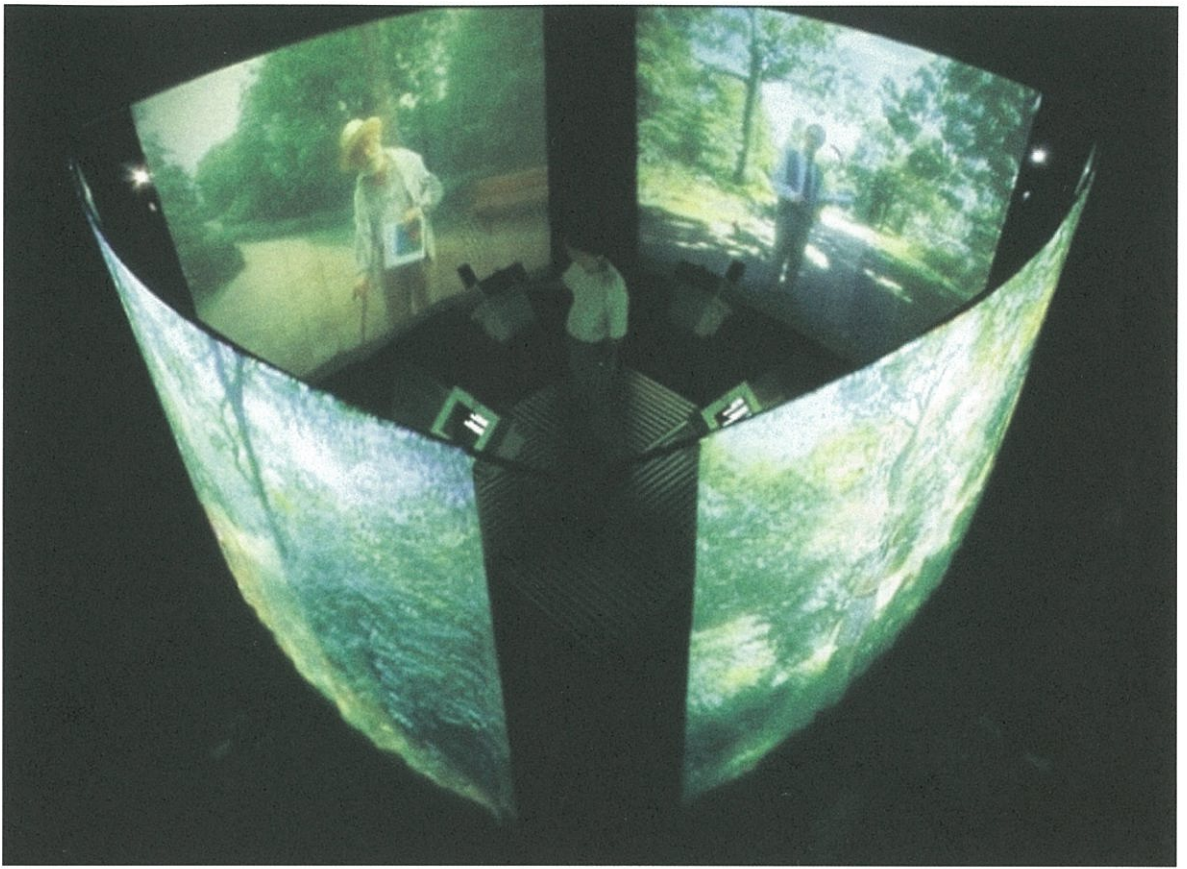


FIG. 7

the time. He further suggests that *The Medium is the Message* should first and foremost be regarded as formal aesthetics' *dernier-cri*. (Schmitz 2001: 118ff).

5. | I do not mean to imply that the formal-aesthetic scenographies for dataspace disregarded its target audience's desires. Far from this, the target audience was even more indifferent than the critical discourse towards the idea of developing culturally specific conventions of representation in digital media, or a non-technology related semiosphere for virtual spaces, in the extended tradition of visual arts. The blurry frontiers of emerging media art allowed for the formation of a highly diverse community of digital insiders, that was well interconnected through digital communication and network tools, and that gathered several times throughout the year at specialised international festivals and conferences like ARS Electronica in Linz, ZKM Multimediale in Karlsruhe, or IAMAS Intermediale in Ogaki. It comprised of practitioners and theorists from a smorgasbord of more or less related professions such as visual arts, video and film, computer science,

engineering, robotics, artificial intelligence and artificial life research, along with a 'smattering of musicians and composers, dancers, theatre directors, architects, graphic and industrial designers, media activists and others' (Penny 2011: In this publication).

The basic requirement for being accepted into this community was the ability to problematise and communicate highly complex topics related to digital technology, the vernacular was techno-talk, if not programming language. In this context, Benedict Anderson's line of argument, that emphasises the role of language in modern nation building (Anderson 1991), offers an interesting further hint to the mysterious success of this *imagined community* of disparate cyberspace immigrants in detaching itself almost entirely from aesthetic experiences normally expected from an artwork (see Penny 1995a). The novel aesthetics of dataspace were rooted in the community's appreciation of the immaterial beauty of bits and bytes as elementary and universal symbols of digital technology, and their convenient and intrinsic callousness towards any meaning, that allowed them to carry every meaning in

digital environments (Rötzer 1991: 28). The scenographies of dataspace were designed in a concerted action of the digital nation to meet the desire for gazing at the technological future.

In that, the combined efforts of artists, scientists, and researchers were quite successful, and the significance of artworks experimenting with digital technologies, especially in areas of human-computer interfaces, networked communication and the representation of space and content in digital environments, for the advance of technology at the end of the twentieth century should not be undervalued. However, the contributions of all these rather costly efforts to the advancement of art into the twenty-first century turned out to be less impressive, despite a small number of interactive artworks that might continue their presence in the public of specialised institutions, as long as these institutions and the used technologies will survive. The unfocussed discourse on Interactive Art was not able to assure a sustainable future for this art genre. Similar to the examples of the brief history of photography and film as means for artistic production, the allure that came with the self-representation of the novel technical media could only fascinate the audience for a short while. With digital media's baffling potential for simulation, representation and re-creation increasingly becoming a matter of course, it is also more and more absorbed into a pragmatic daily life culture (Schmitz 2001: 120).

The concept of Virtual Reality, that relied on massive centralised computer power for the generation of its unreal wonderlands, mutated into the decentralised model of mobile and ubiquitous computing, easily available for a large population as small and affordable commodities of all kind. It is, as a side note, interesting that the field of robotics and artificial intelligence experienced this paradigm shift some 30 years earlier, when the researchers' tremendous opti-

mism in centralised top-down systems could not meet the expectations raised in public and sponsors, and a bottom-up strategy was introduced that oriented itself more towards the intelligence of cockroaches than human beings. Intelligent, independent vacuum cleaners are a daily life testimony of this paradigm shift, and Valentino Braitenberg's essay *Vehicles, Experiments in Synthetic Psychology* still makes delightful reading (Braitenberg 1984).

Decentralised ubiquitous computing created a highly complex dataspace, whose internal structures became largely un-analysable from the outside, by interconnecting a large number of comparatively simple inventions like Apple's *iPhone* through relatively low-level communication processes. This technical framework essentially reflects Braitenberg's 'law of uphill analysis and downhill invention' (Braitenberg 1984: 20). It was not only able to deliver a surprising amount of highflying proposals concerned with communicative, locative and distributive aspects of digital technology discussed at international conferences 20 years ago in the realm of media art. It also established a 'fundamentally new cultural situation', as Lev Manovich observed in his 2008 *Software takes Command* with respect to the Web 2.0 phenomenon of *social networks* of all sorts (Manovich 2008: 136).

The *cockroach paradigm* of ubiquitous computing marks a significant disruption in the brief history of scenographies for dataspace. The technological reality produced by the omnipresence, internationalisation and interconnectivity of mobile digital devices and software applications at the beginning of the twenty-first century transcended the metaphor of Virtual Reality beyond the notion of space. Dataspace in its latest appearance remains highly immersive, although not in a strict physical sense, for it has abandoned all references to illusion, simulation, continuation or re-creation

of real space. This dataspace is defined not as *space*, but as *data*. The audience has finally escaped the darkened black boxes of theatre and cinema spaces and the white boxes of exhibition halls, and traded its state of *immobilisation* (Manovich 2001: 108ff) in front of a proscenium, frame, canvas or screen with a communicative cultural interface responsive to real world environments as it moves along with its user.

Unquestionably, to account for the digital activities of millions of users as artistic expressions would imply an utterly unreasonable extension of Joseph Beuys' already stretched *extended definition of art*. Nonetheless, in a rather unexpected manner, ubiquitous computing finally lived up to the last millennium's anticipation that media technology would 'grow cultural contexts' (Penny 1995b: 69), and develop a 'cultural language in its own right' (Manovich 2001: 71), although it had first to escape the academic discourse on digital technologies and the institutionalised arena of media art. Manovich's 2001 demand that 'new media calls for a new stage in media theory whose beginnings can be traced back to the revolutionary works of Harold Innis in the 1950s and Marshall McLuhan in the 1960s' (Manovich 2001: 48) appears to be still current. Although, rather unsurprisingly regarding the non-art related background of the two cited authors, it bears more significance now that the digital avant-garde operates in a less art-related environment.

However, and secondly, no one was really interested in a reasonable documentation of these scenographies, since content was far less in focus than technological excitement. A complete read of McLuhan's *Understanding Media* as the basic precondition for a solid understanding that his theories cannot, by any means, serve as a user's manual for the creation of media art, might have mitigated the predominance of formal aesthetics in the discourse on digital media art. It might even have facilitated the development of a different artistic practice with digital technologies that would have incorporated more performative art features, providing a more prominent role for scenographers in the creation of dataspace. Thirdly, *mise-en-scenes* disappeared entirely from dataspace. The present decentralised system of ubiquitous computing has managed not only to re-define dataspace, but also to disengage itself entirely from any references to the art of spatial design. This new dataspace requires, if any at all, a scenography of pure information. But as always when purity enters the frame, it may well just prelude the emergence of a new aesthetic concept.

6. | The scenographies for dataspace since the 1990s suffered from triple ephemeræ. Firstly, it is by definition close to impossible to document interactive, user-generated digital spatial designs, since they are supposed to respond differently to each user. Introducing the equivalent to the already established profession of a theatre photographer into the world of media art might have been able to mitigate this dilemma, though.

Endnotes

1 'Morton Heilig developed a radical version of the immersion idea: the Cinema of the Future, offering illusory experiences to all of the senses, including those of taste, smell and touch. The screen would not only fill 18 percent of the spectators' visual field, like CinemaScope in 1954, or 25 percent like Cinerama; Heilig's declared aim was 100 percent: "the screen will curve past the spectators ears on both sides and beyond his sphere of vision above and below". The Cinema of the Future would, Heilig felt, even outdo the "Feelies" envisioned by Aldous Huxley in *Brave New World* and represent an image medium with a unknown suggestive potential: "it will be a great new power, surpassing conventional art forms like a Rocket Ship outspeeds the horse and whose ability to destroy or build men's souls will depend purely on the people behind it".' (Grau 2003: 157)

2 'Glowflow is a space with pressure sensitive sensors on its floor, loudspeakers in the four corners of the room and tubes with coloured suspensions on the walls. The visitor who steps on one of the sensors sets off either sound or light effects. In the scope of the Art & Technology movement in the late sixties artists like Robert Rauschenberg and James Seawright created similar 'responsive environments'. But at that time no one in the 'art world' thought of creating a more complex computer-controlled dialogue and focusing the interaction itself.' (Dinkla 1994)

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